ROZOVSKIY, M.I. (Dnepropetrovsk)

Effect of the time factor on the strength of a spherical shell subjected to the action of internal pressure. Izv. [illegible] SSSR. Otd.tekh.nauk.Mekh. i mashinostr. no.4:124-129 Jl-Ag 161. (MIRA 14:8)
(Plastic plates and shells)

29265
S/145/60/000/003/005/010
D221/D301

10 7306 3108 1327 1413

AUTHOR: Rozovskiy, M.I., Doctor of Physico-Mathematical Sciences, Professor

TITLE: The analysis of creep curves on the basis of integral equations

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Mashinostroyeniye, no. 3, 1960, 49 - 54

TEXT: The processes of creep and relaxation in metals are defined by

$$\sigma = E_0(\varepsilon)\varepsilon - \int_0^t \varepsilon E_0(\varepsilon) R[t, s; \tau(\sigma)]ds \qquad (1)$$

and

$$\varepsilon E_0(\varepsilon) = \sigma + \int_0^t P[t, s; \tau(\sigma)]\sigma(s)ds, \qquad (2)$$

where $P[t, s; \tau(\sigma)]$ is the resolver of nucleous $R[t, s; \tau(\sigma)]$. This is based on experiments that took into account the relationship

Card 1/4

The analysis of creep curves ...

between the instantaneous modulus of elasticity E_o and the ratio of deformation ε and also between R and stress σ. Generally, $R[t, s; \tau(\sigma)]$ indicates the changes of metal deformation curves shown in Fig. 1. with time. Three zones are distinguishable: linear, analogous and where the full effect of the time factor is seen. The author explains the need to introduce a new definition of relaxation time by the model representation of deformed metal which does not indicate the actual process correctly. The linear zone is short. The data of tests seem to be well supported by the exponential equation due to Yu.N. Rabotnov (Ref. 9: Prikladnaya matematika i mekhanika, v. 12, no. 1, 1948). The above includes a gamma equation and some constants. A further equation is proposed for the nucleus of relaxation which may be extended to the creep. By constructing a nomogram as per Fig. 1 with upper and lower curves representing the instantaneous and steady states, it is possible to deduce from their inclination the dimensionless quantity $\lambda = (E_o - E_\infty)/E_o$.

This will allow the finding of τ, when Eqs. (1) and (2) are used. As a result, equations of $\sigma(\tau)$ and $\varepsilon(\tau)$ expressed in terms of known quantities are deduced. The curves in the zone of analogy are con-

The analysis of creep curves ...

gruent, and the time factor does not affect the corresponding part of the curves of deformation. The relaxation time in this zone differs little from its magnitude in the linear region. However, in the zone of full effect, the time factor deviates the curves and also changes their form. This effect varies with different metals and temperature conditions, and Eqs. (1) and (2) should be applied. The author describes a particular case when $\gamma = \beta$, and introduces constants A and B. In specific cases without data on these constants, it is possible to determine them from a nomogram similar to Fig. 1. A numerical example is quoted. There are 1 figure and 11 references: 9 Soviet-bloc and 2 non-Soviet-bloc. The reference to the English-language publication reads as follows: T'ing Sui Ke, Journal Appl. Phys., 20, 274, 1949.

ASSOCIATION: Dnepropetrovskiy gornyy institut (Dnepropetrovsk Mining Institute)

SUBMITTED: March 12, 1959

Card 3/4

ROZOVSKIY, M.I. (Dnepropetrovsk)

Some characteristics of elastic media with aftereffects. Izv.AN SSSR Otd.tekh.nauk.Mekh.i mashinostr. no.2:30-36 Mr-Ap '61. (MIRA 14:4)

1. Dnepropetrovskiy gornyy institut.
(Elasticity)

29070
S/179/61/000/004/014/019
E081/E335

24.4200
11.2313

AUTHOR: Rozovskiy, M.I. (Dnepropetrovsk)

TITLE: Influence of the time factor on the strength of a spherical shell subjected to the effect of an internal pressure

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye tekhnicheskikh nauk. Mekhanika i mashinostroyeniye. no. 4, 1961, pp. 124 - 129

TEXT: The paper is a continuation of previous work (Ref. 4 - PMM, 1959, v. 23, no. 5; Ref. 5 - this journal, 1960, no. 5). The thin spherical shell is constructed of highly extensible material and is subjected to a uniform internal pressure p . The material is assumed to possess relaxational properties and to obey the nonlinear physical equation proposed by Yu.N. Rabotnov (Ref. 1 - Vestn. MGU, 1948, no. 10 - Some problems of the theory of creep):

Card 1/3

29070
S/179/61/000/004/014/019
E081/E335

Influence of the time factor ....

$$E_o \left[\varepsilon(t)^m\right] - E_o \int_0^t H(t, s) \left[\varepsilon(s)\right]^m ds = \tag{1.1}$$

$$= \sigma_1(t) - \nu_o \sigma_2(t) - \nu_o \int_0^t K(t, s)\sigma_2(s)ds$$

where ν_o is the instantaneous Poisson ratio,
$H(t,s)$ and $K(t, s)$ are relaxation kernels,
$\varepsilon(t)$ is strain,
$\sigma_1(t)$ and $\sigma_2(t)$ are stress components,
t is time and
m is a parameter of nonlinearity.

Card 2/3

28721
S/022/61/014/003/006/008
D201/D304

10.7300

AUTHOR: Rozovskiy, M.I.

TITLE: Some problems in the theory of nonsteady creep

PERIODICAL: Akademiya nauk Armyanskoy SSR. Izvestiya. Seriya fiziko-matematicheskikh nauk, v. 14, no. 3, 1961, 97 - 119

TEXT: In the present paper it is shown that by introducing time dependent integral operators, one can establish new physical characteristics for the processes of creep and relaxation of materials and also obtain specific solutions in a forms which is convenient both in qualitative and quantitative analysis. The analysis is based on the following equations:

$$\sigma_x - \sigma_y = (\varepsilon_x - \varepsilon_y)\varphi(\varepsilon_i) - \int_0^t R(t, \tau; \sigma_i)[\varepsilon_x(\tau) - \varepsilon_y(\tau)]\varphi[\varepsilon_i(\tau)]d\tau, \quad (1.1)$$

Card 1/6

Some problems in the theory ...

$$2\tau_{xy} = \gamma_{xy}\varphi(\varepsilon_i) - \int_0^t R(t, \tau; \sigma_i)\,\gamma_{xy}(\tau)\,\varphi[\varepsilon_i(\tau)]\,d\tau, \quad (x, y, z), \tag{1.2}$$

$$\varepsilon_x + \varepsilon_y + \varepsilon_z = k_0(\sigma_x + \sigma_y + \sigma_z), \tag{1.3}$$

where

$$k_0 = \frac{1-2\nu_0}{E_0} = \frac{1-2\nu_0}{2G_0(1+\nu_0)},$$

In these equations the symbol (x, y, z) indicates that the remaining four relations can be obtained by cyclic transpostion of the subscripts. The components of the stress tensor $\sigma_x, \ldots, \tau_{xz}$ and the components of the strain tensor $\varepsilon_x, \ldots, \gamma_{xz}$ are functions of the coordinates x, y, z and the time t, ν_0 is the instantaneous Poisson ratio, E_0 is the instantaneous Young modulus, G_0 is the instant shear modulus, and the stresses and strains σ_y and ε_y given

Some problem in the theory ...

by

$$\sigma_i = \frac{\sqrt{2}}{2}\sqrt{(\sigma_x-\sigma_y)^2+(\sigma_y-\sigma_z)^2+(\sigma_z-\sigma_x)^2+6(\tau_{xy}^2+\tau_{yz}^2+\tau_{xz}^2)},$$

$$\varepsilon_i = \frac{\sqrt{2}}{3}\sqrt{(\varepsilon_x-\varepsilon_y)^2+(\varepsilon_y-\varepsilon_z)^2+(\varepsilon_z-\varepsilon_x)^2+\frac{3}{2}(\gamma_{xy}^2+\gamma_{yz}^2+\gamma_{xz}^2)}.$$

The form of the function $\varphi(\varepsilon_i)$ is determined from experimental data for t = 0. It represents the departure of the curve $\sigma_i = F(\varepsilon_i)$, where $F(\varepsilon_i) = \varepsilon_i\varphi(\varepsilon_i)$, from Hook's line. For large stresses the relaxation kernel $R(t, \tau; \tau_1)$ is a function of σ_i and it is natural to assume that $\tau_1 = \exp[f(\sigma_i)/kT]$ where k is Boltzmann's constant and T is the absolute temperature. It may be assumed that $f(\sigma_i) = u_o - q\sigma_i$ where u_o is the activation energy and q is a constant. Since relaxation experiments are more difficult than creep experi-

Card 3/6

Some problem in the theory ...

ments the relaxation kernel $R(t, \tau; \sigma_i)$ can be found analytically as a resolvent of the creep kernel $P(t, \tau; \sigma_i)$ which can be determined from creep experiments. The author obtains

$$\sigma_i = \frac{3}{2}[1 - \overset{*}{R}(\sigma_i)]\varepsilon_i\varphi(\varepsilon_i) \tag{1.6}$$

whence $\sigma_i[1 - \overset{*}{R}(\sigma_i)]^{-1} \doteq F(\varepsilon_i)$, where $F(\varepsilon_i) = 1.5\varepsilon_i\varphi(\varepsilon_i)$, or

$$\sigma_i[1 + \overset{*}{P}(\sigma_i)] = F(\varepsilon_i). \tag{1.7}$$

This follows because of the relation

$$\frac{1}{1-\overset{*}{R}(\sigma_i)} = 1 + \sum_{n=1}^{\infty}|\overset{*}{R}(\sigma_i)|^n = 1 + \overset{*}{P}(\sigma_i).$$

The sufficient condition for (1.6) to hold is that all the components of the strain tensor should be proportional to a certain com-

Card 4/6

mon parameter which can be a function of the coordinates and the time. Analysis of the curves given shows that there are three regions of deformation which are referred to as 1) the linear region, 2) the similarity region and 3) the general region, in which the time factor must be completely allowed for. The author notes that in the linear region the curves are virtually identical with the Hook lines for different fixed instants of time: The relaxation and creep kernels are independent of σ_i. In the general zone the curves as a whole are not congruent. Here the time factor not only deviates the curves from Hook's line corresponding to t = 0, but also continuously changes their form, i.e. the relation between σ_i and ε_i does not remain the same. Here one must use the general relations given by

$$\sigma_x - \sigma_y = [1 - \overset{*}{R}(\sigma_i)](\varepsilon_x - \varepsilon_y)\varphi(\varepsilon_i), \qquad (1.4)$$

$$2\tau_{xy} = [1 - \overset{*}{R}(\sigma_i)]\gamma_{xy}\varphi(\varepsilon_i), \qquad (x, y, z). \qquad (1.5)$$

Card 5/6

Some problem in the theory ...

The effectiveness of the method based on the above considerations is demonstrated in the concrete case of the creep of a rapidly rotating hollow steel cylinder. The results obtained can be extended to the study of creep and relaxation in other axially symmetric bodies, at least when the principal stresses are related by

$$r\frac{\partial\sigma_r}{\partial r} + \sigma_r - \sigma_\theta + \frac{\gamma\omega^2 r^2}{g} = 0. \qquad (3.3)$$

There are 1 figure and 16 references: 10 Soviet-bloc and 6 non-Soviet-bloc. The references to the English-language publications read as follows: Ting Suike, "Grain Boundary Model and the Mechanism of Viscous Intercrystalline Slip", Journal Appl. Physik., 20, No. 3, 1949; V. Volterra, Theory of Functionales, London, 1931.

ASSOCIATION: Dnepropetrovskiy gornyy institut (Dnepropetrovsk Mining Institute)

SUBMITTED: June 8, 1959

Card 6/6

YERZHANOV, Zh.S., dotsent; ROZOVSKIY, M.I., dotsent

Creep of rock in studying stability near a timberless mine shaft. Izv.vys.ucheb.zaw.; gor.zhur. no.4:53-57 '60.

(MIRA 14:4)

1. Dnepropetrovskiy ordena Trudovogo Krasnogo Znameni gornyy institut imeni Artema. Rekomendovana kafedroy marksheyderskogo dela.

(Mining geology)

ROZVOSKIY, M.I., dokt.fiz.-matematicheskikh nauk, prof.

Using integral equations in processing creep curves. Izv.vys.ucheb.zav.; mashinostr. no.3:49-54 '60. (MIRA 14:3)

1. Dnepropetrovskiy gornyy institut.
(Creep of metals)

24.4200
10.7000

24537

S/179/61/000/002/002/017
E081/E141

AUTHOR: Rozovskiy, M.I. (Dnepropetrovsk)

TITLE: Some characteristics of elasto-hereditary bodies

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Mekhanika i mashinostroyeniye, 1961, No.2, pp. 30-36

TEXT: The paper is a continuation of previous work of the present author (Ref.3: Zhurn.Tekh.Fiz., 1954, Vol.24 No.4; Ref.4: ibid, 1957, Vol.27, No.12.). The elasticity equations for a body showing hereditary characteristics (elastic after-effect) are expressed in integral operator form, the creep operator being the inverse of the relaxation operator. The shear and extension operators may be determined by experiments in torsion and extension or bending respectively. By means of the ϑ-operator of Yu.N. Rabotnov (Ref.1: Prikladnaya Matematika i Mekhanika, 1948, Vol.12, No.1), the relations between the creep and relaxation parameters are established. The results are used to discuss the existence of extremum values with respect to time of the elastic stability of a spherical shell and a rotating disc.

Card 1/2

24537
S/179/61/000/002/002/017
E081/E141

Some characteristics of elasto-hereditary bodies

For the spherical shell there is a unique extremum. For a thick disc, the magnitude of the extremum depends on the coordinates of the point under consideration and on the size of the disc.
For a thin disc there is no extremum.
There are 4 figures and 8 references: 7 Soviet and 1 German.

ASSOCIATION: Dnepropetrovskiy gornyy institut
(Dnepropetrovsk Mining Institute)

SUBMITTED: May 19, 1959

Card 2/2

00671

16.4500

S/041/60/012/001/005/007
C111/C222

AUTHOR: Rozovskiy, M.I.

TITLE: On a Nonlinear Integral Equation

PERIODICAL: Ukrainskiy matematicheskiy zhurnal, 1960, Vol. 12, No. 1, pp. 96 - 98

TEXT: The author investigates the equation

$$(1) \qquad y(t) + \int_0^t \left[P(t,\tau)y(\tau) + qQ(t,\tau)y^2(\tau)\right] d\tau = F(t)$$

appearing in the theory of nonlinear creeping (cf. (Ref. 1)). Under the assumption that $q > 0$, $F(t) > 0$ and that the kernels $P(t,\tau) > 0$, $Q(t,\tau) > 0$ are weakly singular the author constructs the solution $\varphi(t) > 0$ according to the method proposed by him in (Ref. 2). If q satisfies the condition $0 < \frac{4q + \overset{*}{Q}}{(1 + \overset{*}{P})^2} < 1$, where the operators P^* and Q^* are defined by

$$P^* f_1 = \int_0^t P(t,\tau) f_1(\tau) d\tau \ , \quad \overset{*}{Q} f_2 = \int_0^t Q(t,\tau) f_2(\tau) d\tau \ ,$$

Card 1/3

On a Nonlinear Integral Equation

S/041/60/012/001/005/007
C111/C222

then it holds

$$y(t) = F(t) - \int_0^t \Theta_\alpha(t,\tau)F(\tau)d\tau +$$

$$(8) \quad + 2\sum_{n=2}^{\infty}(-1)^{n+1}\frac{(2n-3)!!}{(2n)!!}\int_0^t\left\{\left[F(\tau)\right]^n(4q)^{n-1}\left[\frac{(t-\tau)^{(n-1)\beta+1}}{\Gamma\left[(n-1)\beta+2\right]} + \right.\right.$$

$$\left.\left. + \sum_{\nu=1}^{\infty}(-1)^{\nu}\frac{(2n-1)2n\ldots(2n+\nu-2)}{\nu!}\frac{(t-\tau)^{(n-1)\beta+\nu\alpha+3}}{\Gamma\left[(n-1)\beta+\nu\alpha+4\right]}\right]\right\}d\tau ,$$

where $\Theta_\alpha(t,\tau)$ is the exponential function of Yu.N. Rabotnov (Ref. 3)

$$(7) \quad \Theta_\alpha(t,\tau) = (t-\tau)^\alpha\sum_{n=0}^{\infty}\frac{(t-\tau)^{n(1+\alpha)}}{\Gamma\left[(n+1)(1+\alpha)\right]}$$

and $-1<\alpha<0$, $-1<\beta<0$.
Here for creeping processes in which the author is interested it holds

Card 2/3

88297

S/041/60/012/001/005/007
C111/C222

On a Nonlinear Integral Equation

$$P(t,\tau) = \frac{(t-\tau)^{\alpha}}{\Gamma(1+\alpha)} , \quad Q(t,\tau) = \frac{(t-\tau)^{\beta}}{\Gamma(1+\beta)} .$$

There are 4 references : 3 Soviet and 1 Swedish.

Abstracter's note : (Ref. 1) is a paper of the author in Zh.tekhn. fiz. AN SSSR, 1955, Vol. 25, No. 13. (Ref. 2) is a paper of the author in Doklady Akademii nauk SSSR, 1956, Vol. 111, No. 5. (Ref. 3) is a paper of Yu.N. Rabotnov in Prikladnaya matematika i mekhanika, 1948, Vol. 12, No. 1]

SUBMITTED: May 12, 1958

Card 3/3

85511

S/021/60/000/003/003/010
A232/A029

10.9210
16.7300

AUTHOR: Rozovs'kyy, M.I.

TITLE: The Study of the Creep of a Rotating Pipe Based on Integral-Operator Equations

PERIODICAL: Dopovidi Akademiyi nauk Ukrayins'koyi RSR, 1960, No. 3, pp. 309 - 313

TEXT: The machine building industry shows a considerable interest in the problem of the stress and the displacement which appear in a very long empty cylinder in connection with its rapid, uniform rotation around its axis. In this case, the cylinder is evenly heated to such an extent that the process of creep gains essential importance. Proceeding from the initial physical dependences

$$\sigma_r - \sigma_\theta = (1 - \check{R})(\epsilon_r - \epsilon_\theta)\varphi(\epsilon_i),\quad 2\tau_{r\theta} = (1 - \check{R})\gamma_{r\theta}\varphi(\epsilon_i),\quad (r, \theta, z), \qquad (1)$$
$$\epsilon_r + \epsilon_\theta + \epsilon_z = k_c(\sigma_r + \sigma_\theta + \sigma_z).$$

(Here: $\check{R} f(r, \theta, z, t) = \int_0^t R(t, s) f(r, \theta, z, s)\, ds$ is the integral operator with the relaxation core $R(t, s)$ which affects the corresponding function f of the cylindrical coordinates r, θ, z and that of the time t; k_o is the voluminal

Card 1/2

S/021/60/000/003/003/010
A232/A029

The Study of the Creep of a Rotating Pipe Based on Integral-Operator Equations

compression coefficient), the author develops an integral-operator method for calculating the creep of the rotating pipe. Stress components and the radial displacement are also determined. The author examines the case when the cylinder is free from inner and outer pressures. Based on the data of a nomogram which is a copy of the Figure 602 given by S.D. Ponomarev and others in Reference 1, the results of the calculation appear as follows: $n = 46{,}000$ kg/cm^2, $m = -0.5$, $\alpha = 0.062$ 1/h$^{0.3}$, $\beta = 0.150$ 1/h$^{0.3}$. It is pointed out that the accuracy of the numerical results obtained on the basis of (1) will be dependent on the degree of exactness of the congruence of the deformation curves which correspond to various fixed time moments. The results are illustrated for steel. There is 1 figure and 4 Soviet references.

ASSOCIATION: Dnipropetrovs'kyy hirnychyy instytut im. Artema (Dnepropetrovsk Mining Institute imeni Artem)

PRESENTED: by Savin, H.M., Academician, AS UkrSSR

SUBMITTED: March 25, 1959

Card 2/2

ROZOVSKIY, M.I. (Dnepropetrovsk)

Equations with temporary integral operators for the plane deformation in case of linear strain hardening. Izv.AN SSSR. Otd.tekh.nauk.Mekh.i machinostr. no.5:80-87 '60. (MIRA 13:9)
(Deformations (Mechanics))

ROZOVSKIY, M.I. [Rozovs'kyi, M.I.]

Studying the creep of a rotating tube on the basis of integral operator equations. Dop.AN URSR no.3:309-313 '60. (MIRA 13:7)

1. Dnepropetrovskiy gornyy institut im. Artema. Predstavleno akademikom AN USSR G.N.Savinym [H.M.Savinym].
(Creep of metals)

ROZOVSKIY, M.I. [Rozovs'kyi, M.I.] (Dnepropetrovsk)

Applying the method of integral operators in studying the effect of the time factor on stress distribution in the vicinity of a vertical cylindrical mine shaft. Prykl.mekh. 6 no.2:192-201 '60. (MIRA 13:8)

1. Dnepropetrovskiy gornyy institut.
(Operators(Mathematics)) (Mining engineering)
(Soil mechanics)

S/179/60/000/005/004/010
E081/E135

11.2314

AUTHOR: Rozovskiy, M.I. (Dnepropetrovsk)

TITLE: The Equations of Plane Deformation on Linear Hardening with Time Integral Operators

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Mekhanika i mashinostroyeniye, 1960, No 5, pp 80-87

TEXT: The paper is a continuation of previous work (Refs 3, 9, 11). On the basis of a model proposed by A.Yu. Ishlinskiy (Ref 1), the plane elasto-plastic deformation with linear hardening of a compressible material can be represented by a system of springs and dashpots (Fig 1) consisting of three springs with rigidities a_{10}, a_{20}, a_{30}, three viscous elements with relaxation times τ_1, τ_2, τ_3, and an element with Coulomb friction representing the yield value σ_s. The deformation process allowing for the time factor is described by the heredity type integral equation (1.4). In order to deal with this equation the piecewise-linear approximation to the S-γ curve is adopted (Fig 2); the S-γ relationship is given in Eq.(1.1).

Card 1/2

S/179/60/000/005/004/010
E081/E135

The Equations of Plane Deformation on Linear Hardening with Time Integral Operators

These equations are then used to investigate the features of the relaxation process in the elastic zone, and in the plastic zone with hardening. The change with time of the radius of the plasticity zone with hardening near a circular hole cut in an infinite plane and subjected to a pressure applied to the circumference is also investigated. The results are expressed in terms of $\Im^*_\alpha$ -operators proposed by Yu.N. Rabotnov (Ref 2) and functions realising these.

There are 2 figures and 12 Soviet references.

SUBMITTED: December 15, 1959

Card 2/2

68023

SOV/155-58-6-24/36

~~15(1)~~ 16,7300

AUTHOR: Rozovskiy, M.I.

TITLE: Integral Operators and the Problem of the Creeping of a Hollow Cylinder Rotating Around its Axis

PERIODICAL: Nauchnyye doklady vysshey shkoly. Fiziko-matematicheskiye nauki, 1958, Nr 6, pp 147-151 (USSR)

ABSTRACT: The author considers stresses and deformations of a long hollow cylinder which rotates around the own axis with high constant rotative speed. The cylinder is uniformly heated so that creeping and relaxation processes are of essential importance. Internal and external pressure are absent. The ends of the cylinder are either free or fixed. The author uses the method of Yu.N. Rabotnov [Ref 2] and his exponential function of fractional order and calculates the strsses σ_r, σ_θ, σ_z, and the corresponding deformations. The solutions are written with the aid of the integral operators as already used by Rabotnov, and then with the aid of partially not tabulated functions.

Card 1/2

68023

Integral Operators and the Problem of the Creeping of a Hollow Cylinder Rotating Around its Axis

SOV/155-58-6-24/36

There are 7 references, 5 of which are Soviet, 1 Swedish, and 1 English.

ASSOCIATION: Dnepropetrovskiy gornyy institut (Dnepropetrovsk Mining Institute)

SUBMITTED: November 15, 1958

Card 2/2

67597

24.4000

SOV/179-59-5-18/41

AUTHOR: Rozovskiy, M.I. (Dnepropetrovsk)

TITLE: Nonlinear Integro-Operational Creep Equations and the Problem of Torsion in a Cylinder with Large Angles of Twist

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Mekhanika i mashinostroyeniye, 1959, Nr 5, pp 109-116 (USSR)

ABSTRACT: The paper is a continuation of previous work (Ref 3 and 8). The problem of the cylinder subjected to large angles of twist is discussed on the basis of the nonlinear integral creep equations suggested by Rabotnov (Ref 2) and the author (Ref 3). Rabotnov's equation, when developed and generalized, is in agreement with experiment for many materials, for example aluminium alloys (Ref 4). An integral operational method of wide applicability to the solution of non-linear creep problems is developed and applied in detail to the particular case of the cylinder. Numerical values are given for the creep parameters of aluminium alloys and low-carbon steel. There are 4

Card 1/2

67597

SOV/179-59-5-18/41

Nonlinear Integro-Operational Creep Equations and the Problem of Torsion in a Cylinder with Large Angles of Twist

2 figures and 11 references, 7 of which are Soviet, 2 English, 1 French and 1 German.

ASSOCIATION: Dnepropetrovskiy gornyy institut (Dnepropetrovsk Mining Institute)

SUBMITTED: April 14, 1958

Card 2/2

ROZOVSKIY, M.I. (Dnepropetrovsk)

One nonlinear integral equation. Ukr.mat.zhur. 12 no.1:96-98 '60.
(MIRA 13:10)

(Integral equations)

KRUYNES, I.; ROZOVSKIY, M.

Moscow University im. Lomonosov and Moscow Higher Technical School, imeni Bauman.
"Design of Angular Velocities of Regular Geared Mechanisms with Two Degrees of Freedom." Iz. Ak. Nauk SSSR, Otdel. Tekh. Nauk, No. 10-11, 1945.
Submitted 30 Mar 1945.

[redacted] Report U-1582, 6 Dec 1951.

[redacted], I. I. Cand. Tech. Sci.

Dissertation: "Synthesis of the Automobile and Tank Gear Boxes with Three Degrees of Freedom and without a Constant of an Outer Fulerum." Moscow Order of the Labor Red Banner Higher Technical School imeni N. E. Bauman, 16 Jun 47.

SO: Vechernyaya Moskva, Jun, 1947 (Project #17836)

ROZOVSKIY, M. S.

USSR/Mechanics

Card : 1/1

Authors : Rozovskiy, M. S.

Title : Selection of gear reduction systems consisting of differential three-sectional mechanisms

Periodical : Dokl. AN SSSR, 96, Ed. 4, 701 - 704, June 1954

Abstract : Investigated is a statically determinable gear reductor unit, consisting of two diffirential three-sectional mechanisms, all basic links of which are coaxial. Each such reductor should have four basic links: the master and slave links, the stationary link and one more basic link called the auxiliary. Reductors corresponding to points of one and the same permitted segment differ from each other only by the dimensions of gear wheels. One reference. Graphs.

Institution: GIPROSHAKHTOSTROYMASH (Industrial Mining Machine Construction)

Presented by: Academician L. I. Sedov, March 19, 1954

ROZOVSKIY, M.

USSR/Engineering - Mechanics

Card : 1/1

Authors : Kreynes, M. and Rozovskiy, M.

Title : Selection of gear reduction systems consisting of three differential three-link mechanisms

Periodical : Dokl. AN SSSR, 96, Ed. 6, 1117 - 1120, June 1954

Abstract : Report describes a method of selecting gear reduction systems consisting of three differential three-link mechanisms simply by studying numerous surface diagrams consisting of straight lines only. Statically determinable reductors consisting of three differential three-link mechanisms with basic coaxial links were investigated. It is shown that each such reduction (reducing gear) should have no less than 5 basic links - master link I, slave link II, stationary link and two auxiliary links. One reference. Graphs.

Institution : ...

Presented by : Academician L. I. Sedov, March 19, 1954

ROZOVSKIY, M.S., kand. tekhn. nauk; SHVETS, M. Ye., inzh.

Determining the force of resistance to load displacement along a roller conveyor. Vest. mashinostr. 45 no. 12:36-39 D '65 (MIRA 19:1)

KREYNES, Mikhail Aleksandrovich; ROZOVSKIY, Maks Solomonovich; DATENINA, T.G., red.

[Gears; mathematical bases for the selection of optimal systems] Zubchatye mekhanizmy; matematicheskie osnovy vybora optimal'nykh skhem. Moskva, Izd-vo Mosk. univ., 1965. 333 p. (MIRA 18:10)

ROZOVSKIY, M.S., kand. tekhn. nauk; FEDOSOV, O.P., inzh.

Apparatus for measuring radial pressure diagrams of a piston ring. Trakt. i sel'khozmash. 33 no.9:38-41 S '63. (MIRA 16:10)

1. Nauchno-issledovatel'skiy institut tekhnologii traktornogo i sel'skokhozyaystvennogo mashinostroyeniya.
(Piston rings) (Measuring instruments)

S/122/63/000/002/002/012
D262/D308

AUTHOR: Rozovskiy, M. S. Candidate of Technical Sciences

TITLE: Force design of stressed radiation gears

PERIODICAL: Vestnik mashinostroyeniya, no. 2, 1963, 13-19

TEXT: Characteristic features connected with friction losses of reduction gears are investigated. The results of the calculations for a typical reduction gear system, usually employed in feeding systems of machine tools and having a spring-loaded device to create constant predetermined torque on the intermediate shafts, show that the efficiency of the reductor varies with the load on the driven shaft and also depends on the direction of rotation of its driving shaft. Diagram of moments of the reductor taking into account friction losses, and design formulas for efficiency and moments on shafts for both directions of rotation are presented. There are 5 figures and 1 table.

Card 1/1

KREYNES, M.A., doktor fiziko-matematicheskikh nauk, prof.; ROZOVSKIY, M.S., kand.tekhn.nauk

Selecting systems of toothed reducing gears made of three differential three-bar linkages. Vest.mashinostr. 42 no.11:28-33 N '62. (MIRA 15:11)

(Gearing)

ROZOVSKIY, M.S. (Moskva)

Efficiency and self-braking conditions of preloaded reducing gears. Izv.AN SSSR.Otd.tekh.nauk.Mekh.i mashinostr. no.2:96-104 Mr-Ap '62. (MIRA 15:5)

(Gearing)

ROZOVSKY, N.

USSR/Gearing Mar 1947

"Plans of Moments and Plans of Moment Ratios of Regular Toothed Gear Mechanisms," N. Rozovsky, 3 pp

"CR Acad Sci" Vol LV, No 9

Consideration of a regular toothed gear mechanism, and the relations between moments applied externally to its links.

8T73

AMR

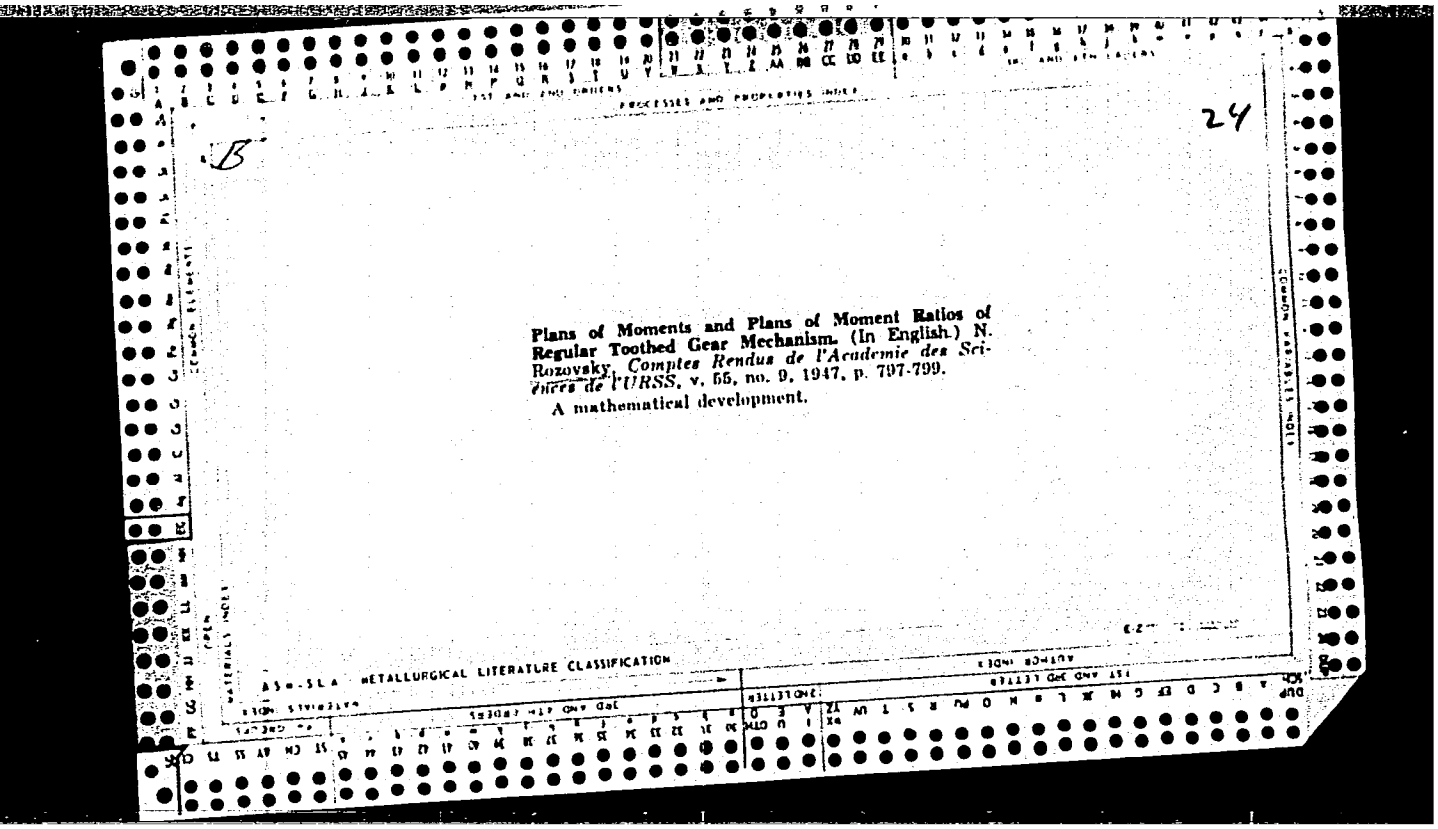
General Dynamics,
Kinematics, Friction
23

391. **N. Rorovsky, "Plans of moments and plans of moment ratios of regular toothed gear mechanisms"** (in English), *C. R. Acad. Sci. URSS*, Mar. 30, 1947, vol. 55, no. 9, pp. 797-799.

The author devises certain geometrical constructions to facilitate the establishment of the relations between the moments applied externally to the basic links of a regular toothed gear mechanism, which produces either two or three independent relations between the angular velocities of its basic links.

Ian N. Sneddon, Scotland

Mar 48



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Plans of Moments and Plans of Moment Ratios of Regular Toothed Gear Mechanism. (In English.) N. Rozovsky. *Comptes Rendus de l'Academie des Sciences de l'URSS*, v. 55, no. 9, 1947, p. 797-799.

A mathematical development.

ROZOVSKIY, N.V., prof.; ALKS, A.O.

Extrapulmonary use of nitrogen oxide in the early postoperative period. Vest. khir. 93 no.12:74-78 D '64. (MIRA 18:5)

1. Iz gospital'noy khirurgicheskoy kliniki (zav. - prof. N.V. Rozovskiy) Krasnoyarskogo meditsinskogo instituta.

ROZOVSKIY, N.V.; YERMUKHIN, A.N.

Use of nitrous oxide combined with relaxants in intrathoracic operations. Trudy Inst. klin. i eksp. khir. AN Kazakh. SSR 9:115-119 '63. (MIRA 17:12)

ROZOVSKIY, N.V., prof.; VOROB'YEVA, G.D.

Therapy of cardiospasm. Khirurgiia 40 no.1:71-73 Ja '64.
(MIRA 17:1)

1. Kafedra gospital'noy khirurgii (zav. - prof. N.V. Rozovskiy) Krasnoyarskogo meditsinskogo instituta.

Name: ROZOVSKIY, Nikolay Valerianovich

Dissertation: Experiment in pathogenetic treatment of obliterating endarteritis by intra-arterial injection of blood (clinical and experimental study)

Degree: Doc Med Sci

Affiliation: [not indicated]

Defense Date, Place: 19 Dec 55, Council of 1st Leningrad Med Inst imeni Pavlov

Certification Date: 26 May 56

Source: BMVO 4/57

ROZOVSKIY, N.V., prof. (Krasnoyarsk, prospekt Mira, d.37, kv.22); KRUTYANSKAYA, K.S.

Treatment of patent ductus arteriosus in children. Vest. Khir. 91 no.12:73-76 D '63. (MIRA 17:9)

1. Iz gospital'noy khirurgicheskoy kliniki (zav.-prof. N.V. Rozovskiy) Krasnoyarskogo meditsinskogo instituta baze krayevoy klinicheskoy bol'nitsy No.1 (glavnyy vrach - V.K. Sologub).

ROZOVSKIY, N.V.

"Gunshot Wounds in the Posterior Regions of the Heart," Khirurgiya, No. 5, 1948.

Cand. Medical Sci.

Mbr., Surgical Dept., Main Naval Order Red Banner Hosp. of Black Sea Fleet, -c1948-.

ROZOVSKIY, N.V., doktor med.nauk

Treatment of endarteritis obliterans by intra-arterial blood infusion [with summary in English]. Khirurgiia 33 no.12:53-59 D '57. (MIRA 11:2)

1. Iz kafedry voyenno-morskoy khirurgii (nach. - prof. P.S.Fedorov) voyenno-morskogo fakul'teta pri Leningradskom meditsinskom institute imeni I.P.Pavlova i laboratorii Instituta normal'noy i patologicheskoy fiziologii AMN SSSR (zav. laboratoriey i dir. instituta - chlen-korrespondent AN SSSR i deystvitel'nyy chlen AMN SSSR prof. V.N.Chernigovskiy)

(THROMBOANGIITIS OBLITERANS, ther.
blood transfusion, intra-arterial)
(BLOOD TRANSFUSION, in various dis.
thromboangiitis obliterans, intra-arterial infusion)

ROZOVSKIY, N. V.

ROZOVSKIY, N, V. -- "Experience in the Pathogenetic Treatment of Obliterating Endarteritis by the Intraarterial Administration of Blood. (Clinical and Experimental Investigations)." First Leningrad Med. Inst imeni Academician I. P. Pavlov, Leningrad, 1955. Dissertation for the Degree of Candidate in Medical Sciences)

SO: Knizhnaya Letopis', No. 35, 1955

ROZOVSKIY, N.Ya.

Effect of overloading on the fatigue strength of the members of crane metal structures. Trudy LPI no.254:92-100 '65.
(MIRA 19:1)

ROZOVSKIY, R.S., inzh., red.; PORTNOY, Z.S., nauchn. red.

[New and proposed hoisting and conveying machines and mechanisms] Novye i perspektivnye pod"emno-transportnye mashiny i mekhanizmy. Moskva, Nos.2-3. 1960. 237 p. (MIRA 16:11)

1. Moscow. Vsesoyuznyy nauchno-issledovatel'skiy institut pod"yemno-transportnogo mashinostroyeniya.
(Hoisting machinery) (Conveying machinery)

GORA, V.Ye., inzh.; SEMASHKO, P.V., inzh., nauchnyy red.; ROZOVSKIY, R.S., inzh., red.; PONUSOV, N., tekhn. red.

[Bridge cranes] Krany mostovye. Moskva, Otdel tekhn. informatsii, 1961. 138 p. (MIRA 15:11)

1. Moscow. Vsesoyuznyy nauchno-issledovatel'skiy institut pod"emno-transportnogo mashinostroyeniya.
(Cranes, derricks, etc.)

TSETLIN, Boris Viktorovich; POLUEKTOV, Yevgeniy Vyacheslavovich; ROZOVSKIY, R.S., inzh, retsenzent; KUGINIS, B.L., inzh, retsenzent; DUVANKOV, G.S., red.; BARYKOVA, G.I., red.izd-va; TIKHANOV, A.YA., tekhn.red.

[Safety measures in operating load-lifting machinery at machinery manufacturing plants] Tekhnika bezopasnosti pri ekspluatatsii gruzopod"emnykh mashin na mashinostroitel'nykh zavodakh. Moskva, Gos. nauchno-tekhn.izd-vo mashinostroit. lit-ry, 1958. 145 p. (MIRA 12:1)

(Hoisting machinery) (Machinery industry--Safety measures)

ROZOVSKIY, S.

Made in Ryazan. Mashinostroitel' no.2:19 F '64.(MIRA 17:3)

ROZOVSKIY, Semen Yefimovich; NAZAROV, Viktor Grigor'yevich, inzh.; SLAVNITSKAYA, N.N., red.; AZOVKIN, N.G., tekhn. red.

[Reduction of labor-consuming operations]Po puti snizheniia trudoemkosti. Riazan', Riazanskoe knizhnoe izd-vo, 1962. 24 p. (MIRA 15:12)

1. Zamestitel' nachal'nika byuro ratsionalizatsii, izobretatel'stva i tekhnicheskoy informatsii Ryazanskogo zavoda TKPO (for Rozovskiy). 2. Byuro ratsionalizatsii, izobretatel'stva i tekhnicheskoy informatsii Ryazanskogo zavoda TKPO (for Nazarov). (Metalwork--Technological innovations)

L 10411-67 FSS-2/EWT(1)/EWP(t)/EWT(m)/ETI IJP(c) DS/JD/HW
ACC NR: AP6029881 SOURCE CODE: UR/0413/66/000/015/0043/0043

AUTHORS: Tomashevskiy, F. F.; Lamedman, E. M.; Aksel'rod, Sh. S.; Gryadinskaya, V. P.; Dubnova, A. L.; Rozovskiy, V. M.; Basharina, Yu. I.

ORG: none

TITLE: Nonlamellar negative electrode of an alkaline iron-nickel battery. Class 21, No. 184300 [announced by plant "Leninskaya Iskra" (Zavod "Leninskaya Iskra")]

SOURCE: Izobret prom obraz tov zn, no. 15, 1966, 43

TOPIC TAGS: electrode, battery, potassium compound, iron, nickel

ABSTRACT: This Author Certificate presents a nonlamellar negative electrode of an alkaline iron-nickel battery. After reducing the iron oxides free of impurities, the electrode contains 40--70% of metallic iron in its active volume. To simplify the technique of its preparation by eliminating the operation of fusing, the potassium base is added to iron oxides before their reduction. Specific weight of the potassium base is 1.40--1.48 g/cm^3, and its amount is 0.5--5%.

SUB CODE: 10/ SUBM DATE: 10Sep65

Card 1/1 bpp UDC: 621.355.8.035.222

ISAKOVICH, G.A., kand.tekhn.nauk; SHMIDT, L.M., kand.tekhn.nauk; BRONSHTEYN, B.S., inzh.; ROZOVSKIY, V.S., inzh.

Synthetic binders in the production of mineral wool products.
Stroi. mat. 11 no.10:35 O '65. (MIRA 18:10)

ROZOVSKIY, V.S., mayor meditsinskoy sluzhby; RATKEVICH, G.I.

Determination of adequate supply of vitamin C in the organism by means of its examination in urine voided on an empty stomach. Voen.-med.zhur. no.11:53-56 '64. (MIRA 18:5)

(2)

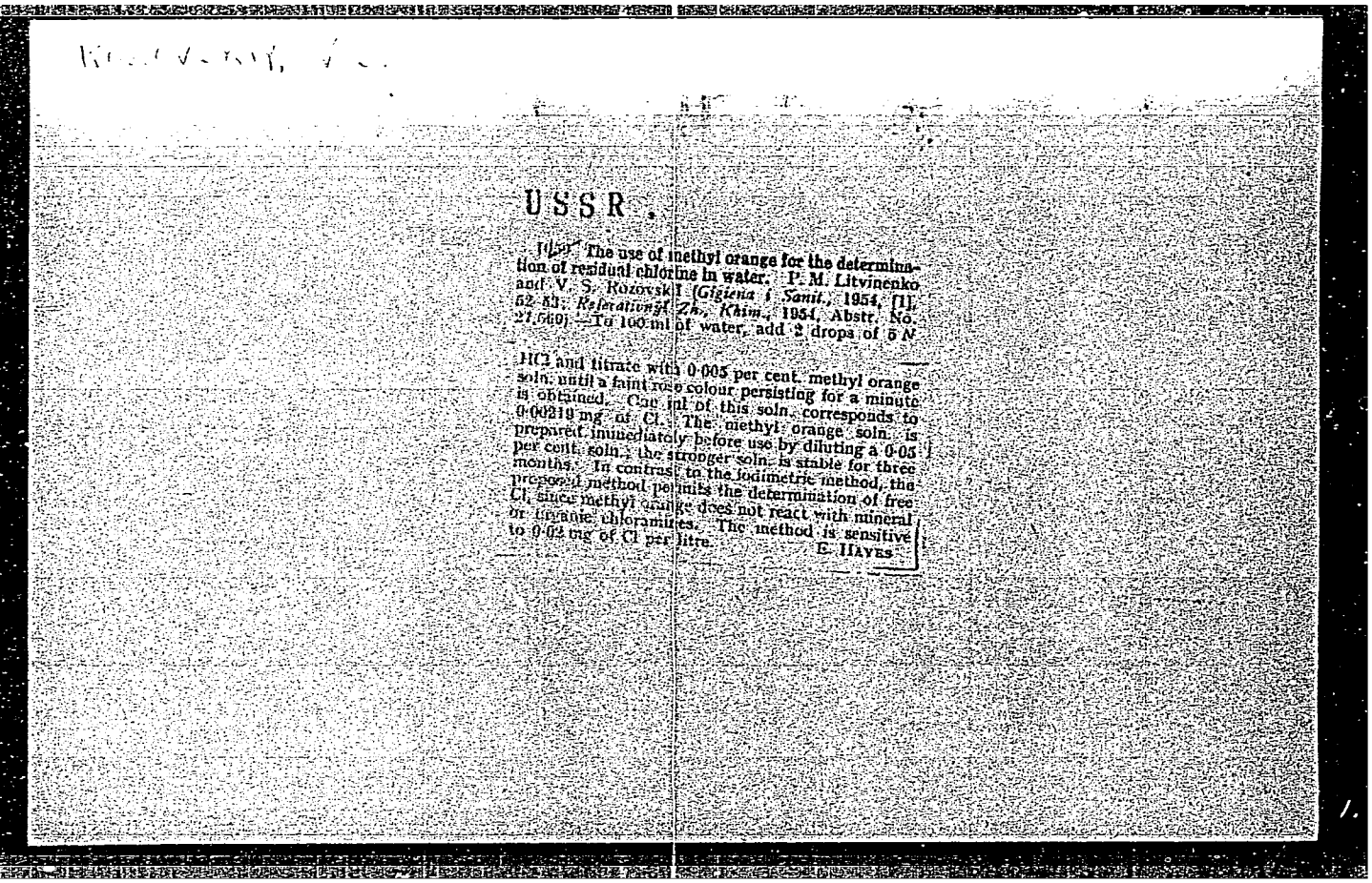
Use of methyl orange in determination of residual chlorine in water. P. M. Litvinenko and V. S. Rozovskii. *Gigiena i Sanit.* 1954, No. 1, 62–3.—In the usual iodometric detn. of Cl in water or that with methyl orange good agreement was found with the actual amounts of Cl added to the test solns. In the presence of chloramines, the methyl orange method gave results that are consistently below those found iodometrically, but these results checked very well the amount of free Cl. Thus the methyl orange method is specific for Cl and does not include the chloramine values. The methyl orange method has sensitivity of 0.02 mg./l. The procedure: to 100 ml. soln. add 2 drops 5*N* HCl and titrate with 0.005% methyl orange until a weak pink color appears; 1 ml. is equiv. to 0.00219 mg. Cl. G. M. K.

ROZOVSKIY, V.[illegible], inzh.; SHLYAKOV, N.I., inzh.; [illegible], L.M., kand. tekhn. nauk

Technology of manufacturing mineral-wool products of greater rigidity. Stroi. mat. 11 no.2:14-16 F '65. (MIRA 18:3)

ROZOVSKIY, V. (g. Saratov); VERSHINSKIY, G. (g. Khar'kov); KUKLIN, G. (g. Kirov)

Readers' letters. Izobr. i rats. no.4:31 Ap '62. (MIRA 15:4)
(Technological innovations)



USSR

[illegible] The use of methyl orange for the determination of residual chlorine in water. P. M. Litvinenko and V. S. Rozovskii (*Gigiena i Sanit.*, 1954, [1], 62–63; *Referativnyi Zh., Khim.*, 1954, Abstr. No. 27,569).—To 100 ml of water, add 2 drops of 5 *N* HCl and titrate with 0·005 per cent. methyl orange soln. until a faint rose colour persisting for a minute is obtained. One ml of this soln. corresponds to 0·00219 mg. as Cl. The methyl orange soln. is prepared immediately before use by diluting a 0·05 per cent. soln.; the stronger soln. is stable for three months. In contrast to the iodimetric method, the proposed method permits the determination of free Cl, since methyl orange does not react with mineral or organic chloramines. The method is sensitive to 0·02 mg of Cl per litre.

E. Hayes

28(1) SOV/118-59-4-21/25

AUTHOR: Rozovskiy, V.S., Engineer

TITLE: A New Electric Hoist

PERIODICAL: Mekhanizatsiya i avtomatizatsiya proizvodstva, 1959, Nr 4, p 57 (USSR)

ABSTRACT: The Moskovskiy zavod malolitrazhnykh avtomobiley (the Moscow Small Automobile Plant) has started the serial production of a new electric hoist with a rigid carriage, designed by the Vsesoyuznyy nauchno-issledovatel'skiy institut pod"yëmno-transportnogo mashinostroyeniya (All-Union Scientific Research Institute of Lifting and Conveying Machine Building). The new electric hoist is a general purpose mechanism consisting of an electric motor, a three-pair cylindrical reducer, and an electromagnetic disc brake. The hoist, operated by press button control, is moved along a monorail by hand. As compared with the standard model (GOST - 3472-54), the new TE 0.25 electric hoist weighs half as much

Card 1/2

and is considerably smaller. Technical characteristics of the TE 0.25 are: lifting capacity - 250 kg; lifting height - 6 m; lifting speed - 8 m per minute; and uses a cable of the 6x19+1 type. It is powered by an AOL 22-4 electric motor (0.4 kilowatt). The total weight of the electric hoist is 56.5 kg. If necessary, the hoist may be connected to an electric traction motor designed by the VNIIPTMASh and produced in series by the Mashinostroitel'nyy zavod Chelyabinskogo sovnarkhoza (Machine Building Plant of the Chelyabinsky Sovnarkhoz). There are 2 diagrams.

LITVINENKO, P.M.; ROZOVSKIY, V.S.

Use of methyl orange for the detection of residual chlorine in water. Gig.i san. no.1:52-53 Ja '54. (MLRA 6:12)
(Methyl orange) (Water--Analysis)

ROZOVSKIY, Y. L. (Kiyev)

"Velocity Profile and Pressure Distribution Near The End of a Horizontal Tube with Free Outflow."

report presented at the First All-Union Congress on Theoretical and Applied Mechanics, Moscow, 27 Jan - 3 Feb 1960.

"An Instrument for Testing Electric Hand Tools." Stanki I Instrument Vol. 15, No. 12, 1944.

BR 52059019

L 9895-66 EWT(1)

ACC NR: AP5026571 SOURCE CODE: UR/0281/65/000/005/0077/0083

AUTHOR: Rozovskiy, Yu. A. (Leningrad)

ORG: none

TITLE: Investigation of electromagnetic processes in solid-rotor induction machines

SOURCE: AN SSSR. Izvestiya. Energetika i transport, no. 5, 1965, 77-83

TOPIC TAGS: induction machine, induction machine theory

ABSTRACT: An induction machine comprising a cylindrical solid rotor inside a laminated steel 3-phase-wound stator is considered; the rotor has three degrees of freedom. The general Maxwell equations and rotor-motion equations can, in principle, be solved simultaneously, their solution characterizing the electromechanical processes in the machine. The connection between the stator-circuit

Card 1/2 UDC: 621.313.33:621.3.013

L 9895-66

ACC NR: AP5026571

parameters and the air-gap electromagnetic field can be obtained from examination of the field vectors at stator and rotor surfaces. However, the general solution is too difficult; hence, only some particular cases, such as a stationary sinusoidal process, small rotor oscillations, or an electromagnetic torque of the machine, seem to be practical. Formulas for the latter case are developed; they can be simplified for near-no-load and near-short-circuit conditions. Orig. art. has: 2 figures and 55 formulas.

SUB CODE: 09 / SUBM DATE: 17May65 / ORIG REF: 003 / OTH REF: 001

PC

Card 2/2

ANDREYUK, V.A.; ROZOVSKIY, Yu.A.

Use of compensated synchronous support compensators in long-distance power transmission systems. Izv. NIIPT no.2:208-218 '57. (MIRA 18:9)

L 23008-66 FSS-2/EWT(l)/EWT(m)/ETC(f)/EWG(m) JD/HW

ACC NR: AP6007662 SOURCE CODE: UR/0413/66/000/003/0031/0031

AUTHOR: Rozovskiy, V. M.; Fisher, T. L.; Basharina, Yu. I.; Chebakova, N. A. Kuz'min, V. A.; Maklyarskaya, A. A.; Avdeyeva, I. D.; Gavrilina, L. V.

ORG: none

TITLE: Iron-nickel alkaline battery. Class 21, No. 178401 [announced by the Scientific-Research Institute for Chemical Current (Nauchno-issledovatel'skiy institut khimicheskikh istochnikov toka)]

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 3, 1966, 31

TOPIC TAGS: battery, alkaline cell

ABSTRACT: An Author Certificate has been issued for an iron-nickel alkaline battery with lamellar-perforated electrodes of which the negative one is made from hydrogen-reduced iron. In order to increase the capacity at low temperatures and after prolonged discharge, the active mass of the iron electrode is supplemented with additions of antimony oxide and sulfide sulfur. The additions range from 2--4% for antimony oxide and 0.4--0.6% for sulfide sulfur. The iron electrode is

Card 1/2 UDC: 621.355.8

L 23008-66

ACC NR: AP6007662

produced in the form of lamellar tape with 16 to 18% open surface.
[LD]

SUB CODE: 10/ SUBM DATE: 13Aug64/

Card 2/2

[illegible], [illegible]

Regulation of the excitation of generators according to voltage at an intermediate point of the line as a means for increasing the stability of long-distance power transmission systems. Izv. NIIPT no.1:28[illegible]-287 '57. (MIRA 18:9)

BELOUSOV, M. M. Eng., BASKAKOV, O.N. Eng., SIROTA, I. M. Eng., ROZOVSKIY, YU. A. ENG.

Electric Lines

Problem of four-wire and six-wire electric transmission lines. Elektrichestvo No. 3, 1953.

9. Monthly List of Russian Accessions, Library of Congress, June 1953. Unclassified.

ROZOVSKIY, Yu.A.

Consideration of wave processes in the analysis of the statical atability of long-distance transmissions. Elektrichestvo '53, No.3, 17-21.(MLRA 6:3) (EEA 56 no.672:4768 '53)

Presents eqs for small disturbances un synchronous machine transmission line system which allows for wave processes in long transmission lines. Examines procedure for calcg static stability of systems with distributed consts which gives quant evaluation of effect of wave processes on ~~xix~~ calcn results. Practical example illustrates application of procedure to stability analysis. Submitted 3 October 1952.

254T36

ROZOVSKIY, Yu. A.

B. T. R.
Vol. 3 No. 3
Mar. 1954
Electrical
Engineering

3169* Self Oscillation of Synchronous Machines Operating on Compensated Transmission Lines. (Russian.) Iu. A. Rozovskii. *Elektrichestvo*, 1953, no. 10, Oct., p. 3-8.

Discusses moment-velocity characteristics of prime mover, nonlinear vibrations of synchronous machines, and determination of conditions for existence of stable limit cycles. Graphs. 4 ref.

ANDREYEV, V.V., kandidat tekhnicheskikh nauk; ROZOVSKIY, Yu.A., kandidat tekhnicheskikh nauk; MARCHENKO, Ye.A., inzhener; MELIK-SARKISOV, B.S., inzhener.

Remarks on G.I.Atabekov's article "Problems of relay protection of electric transmission lines with longitudinal capacity compensation." Elektrichestvo no.4:73-74 Ap '54. (MLRA 7:5)

1. Nauchno-issledovatel'skiy institut postoyannogo toka.
(Electric lines) (Atabekov, G. I.)

ROZOVSKIY, Yu.A., kandidat tekhnicheskikh nauk; MARCHENKO, Ye.A., inzhener; ANDREYUK, V.A., inzhener.

Self-oscillation and self-excitation of compensated synchronous compensators. Elektrichestvo no.5:59-63 My '56. (MLRA 9:8)

1. Nauchno-issledovatel'skiy institut postoyannogo toka.
(Electric power distribution)

PHASE I BOOK EXPLOITATION 876

Marchenko, Ye.A., Rozovskiy, Yu.A., Shur, S.S., Candidates of Technical Sciences

Prodol'naya yemkostnaya kompensatsiya liniy elektroperedachi (Series Capacitor Compensation in Transmission Lines) Moscow, Gosenergoizdat, 1957. 47 p. (Series: Iz opyta sovetskoy energetiki) 11,300 copies printed.

Sponsoring Agency: Orgres, trust, Moscow. Byuro tekhnicheskoy informatsii.

Eds.: Korsuntsev, A.Y., Candidate of Technical Sciences, and Demkov, Ye.D.; Tech. Ed.: Medvedev, L.Ya.

PURPOSE: The book is intended for designers and network technicians undergoing training for the operation of series capacitor compensation installations.

Card 1/4

Series Capacitor Compensation in Transmission Lines 876

COVERAGE: The authors describe the purpose and applications of series capacitor compensation and discuss special features of short-circuit conditions in compensated transmission lines. They describe the basic principles of erecting series capacitor batteries and also special behavioral properties of compensated networks. They supply connection diagrams of capacitors and discuss the problems involved in protecting series capacitors against internal damage; they also give examples of completed installations and their operational testing. In writing the book the authors drew on materials published by teploelektroproyekt concerning construction of the Kuybyshev electric power transmission line, the works of N.N.Shchedrin and A.V.Korsuntsev; M.L.Levinshteyn of LPI; M.A.Babikov and A.I.Dolginov of MEI; and V.V.Andreyev, V.M.Faynitskiy and A.K.Gertsik of NIIPT. There are 40 references, of which 27 are Soviet, 10 English, 1 French and 2 German.

TABLE OF CONTENTS:

Series Capacitor Compensation in Transmission Lines 876

AVAILABLE: Library of Congress (QC587.07)

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11-21-58

Card 4/4

ROZOVSKIY, Yu.A.

Derzhevskiy, V.A.

8(3) PHASE I BOOK EXPLOITATION SOV/1386

Moscow. Nauchno-issledovatel'skiy institut postoyannogo toka

Peredacha energii postoyannym i peremennym tokom (Power Transmission by Direct and Alternating Current) Moscow, Gosenergoizdat, 1958. 334 p. (Series: Its: Izvestiya, sb. 3) 3,350 copies printed.

Ed.: Pintsov, A.M.; Tech. Ed.: Voronetskaya, L.V.; Editorial Board: Shchedrin, N.N., Doctor of Technical Sciences, Corresponding Member, Uzbek SSR Academy of Sciences, Professor (Chief Ed.); Gertsik, A.K., Engineer; Yemel'yanov, V.I., Candidate of Technical Sciences; Pimenov, V.P., Candidate of Technical Sciences; Pintsov, A.K., Candidate of Technical Sciences; Posse, A.V., Candidate of Technical Sciences; Sena, L.A., Doctor of Physical and Mathematical Sciences, Professor; Sonin, M.R., Engineer; Shakhtman, M.G., Candidate of Technical Sciences.

PURPOSE: This collection of articles, issued by the USSR Ministry of Electric Power Stations, is intended for scientists, engineers and designers of high-voltage overhead transmission lines.

Card 1/13

Koshcheyev, L.A. and Yu.A. Rozovskiy. Static Stability of Long-distance Electric Transmission Lines with Auxiliary Synchronous Condensers 299

NIIPT has carried out an investigation on comparative stability of long distance transmission lines with and without synchronous condensers. The investigations were carried out in the Stalingrad GES - Moscow line. The authors describe the tests and their results. They mention experimental work done by A.I. Kazachkov, V.A. Anreyuk, A.P. Zhilin and A.V. Buzmistrov. I.A. Kosov and Ye.F. Arsamastsev participated in developing the stability comparison model. There are 7 diagrams and 7 references, all Soviet.

Card 12/13

KOSTENKO, M.P., akademik; ZAVALISHIN, D.A., prof.; SHCHEDRIN, N.N., doktor tekhn. nauk; SALITA, P.Z., inzh.; VAZHNOV, A.I., kand. tekhn. nauk, dots.; ROZOVSKIY, Yu.A., kand. tekhn. nauk; MARCHENKO, Ye.A., kand. tekhn. nauk; POLYAK, [illegible]; VENIKOV, [illegible]

Dynamic models of power systems. Elektrichestvo no.2:78-85 F '58. (MIRA 11:2)

1. Nauchno-issledovatel'skiy institut postoyannogo toka (for Schedrin, Salita, Vazhnov, Rozovskiy, Marchenko, Polyak). 2. Chlen-korrespondent AN Uzbekskoy SSR (for Shchedrin). 3. Moskovskiy energeticheskiy institut (for Venikov).

(Electric networks)

KOSHCHEYEV, L.A.; ROZOVSKIY, Yu.A.

Investigating the static stability of long-distance electric power lines equipped with synchronous strut compensators. Izv. NIIPT no.3:299-312 '58. (MIRA 12:1)
(Electric lines--Models)

ROZOVSKIY, Yu.A.

110-1-1/19

AUTHOR: Rozovskiy, Yu.A., Candidate of Technical Sciences, Salita, P.Z., Engineer, and Ipatov, P.M. Candidate of Technical Sciences.

TITLE: On the Constants of Hydro-alternators for Use with Long-distance Transmission Lines with Synchronous Compensators (O parametrakh gidrogeneratorov dlya dal'nikh elektro-peredach s podpornymi sinkhronnymi kompensatorami)

PERIODICAL: Vestnik Elektropromyshlennosti, 1958, Vol.29, No.1, pp. 1 - 4 (USSR).

ABSTRACT: When hydro-electric stations feed relatively short transmission lines, stability is enhanced by reducing the reactance of the generators and increasing their inertia. However, when the lines are so long that stability cannot be achieved without special arrangements (such as the use of series capacitors or synchronous compensators), the above measures may be less effective. Since 1955, the NIIPT, together with the staff of the Elektrosila Works and the Electrical Machines Faculty of the Leningrad Polytechnical institute (Leningradskiy politekhnicheskiy institut), have been investigating the stability of long-distance transmission lines and the rational selection of characteristics for hydro-alternators and synchronous condensers. This article

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gives a brief outline of the main results of work relating to the Stalingrad Hydro-electric Station-Moscow transmission line. The stability of this line was investigated using the electro-dynamic model, the circuit and main characteristics of which are given in an article by Rokotyan in Elektricheskiye Stantsii, 1956, No.8.

First, the influence on the steady-state stability of the installed output and location of the synchronous condensers was determined. If the improved values of hydro-alternator characteristics were used and if synchronous condensers with a total capacity of 280 MVA were installed in the first substation, an adequate steady-state stability limit is achieved even without series capacitors. This arrangement was accordingly made the basis of further work. Stability limits with various values of generator reactance are taoulated and it will be seen that the generator reactance has relatively little influence. Increase in the reactance of one section of the transmission system can largely be compensated by appropriate adjustment of the regulators.

To increase the permissible time for disconnecting a fault,

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the inertia constant of the Stalingrad generators was selected as 16 sec. As it was not proposed to brake the generators, this solution was correct. However, electrical and mechanical braking is now proposed to improve the stability of the power station and extra inertia becomes necessary. Work done in the Institute by Candidate of Technical Sciences Ye.A. Marchenko showed that with suitable electrical braking of the generators, dynamic stability can be ensured with an inertia constant of the order of 10 sec.
The cost and size of generators having extra reactance and inertia was calculated. The effect of the direct-axis transient reactance on the cost is most marked. An approximate formula is given for the relationship between this value and the weight and cost of the generator. The relationship between the machine constant and the transient reactance for a generator of 123.5 MVA, 13.8 kV and 68.2 r.p.m. is given in Fig.2. The relationship between the linear load and the transient reactance for a pole-pitch of 51 cm is given in Fig.3. For a hydro-alternator of the type in question, the normal inertia for the given reactance is of the order of 8 or 9 sec; for an

8.(2)

AUTHOR: Rozovskiy, Yu. A., Candidate of Technical Sciences. SOV/105-59-11-21/32

TITLE: On the Problem of the Use of Compensated Synchronous Compensators

PERIODICAL: Elektrichestvo, 1959, Nr 11, pp 84-85 (USSR)

ABSTRACT: The present paper criticizes the paper published by the authors V. A. Venikov (Doctor of Technical Sciences, Professor) and D. A. Fedorov (Candidate of Technical Sciences, Docent) (Elektrichestvo, 1957, Nr 9). In the criticized paper a higher time constant of the damping circuit and a connection of damping resistors into the stator circuit is recommended. This leads to an increase of the natural vibration zone of the compensator and thus to an increase in the losses. From the technical and economical view this measure seems not recommendable. Proceeding from a paper by S. A. Lebedev the author arrives at the conclusion that a further decrease in the power of the synchronous compensators is possible only by a decrease in the transmission capacity x'_d. The advantages of this measure are described and formulas are deduced giving the decrease in the compensator power and the decrease of the time

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SHCHEDRIN, M.N., prof., doktor tekhn.nauk; ROZOVSKIY, Yu.A., kand. tekhn.nauk

Utilization of synchronous strut compensators. Izv.vys.ucheb. zav.; energ. 2 no.4:1-7 Ap '59. (MIRA 12:9)

1. Nauchno-issledovatel'skiy institut postoyannogo toka.
2. Chlen-korrespondent AN UzSSR (for Shchedrin).
(Electric power distribution)

ROZOVSKIY, Yu.A.; SHCHEDRIN, N.N.

Concerning the use of supporting synchronous compensators. Izv. NIIPT no.5:247-254 '60. (MIRA 14:1)
(Interconnected electric utility systems)
(Electric power distribution)

S/196/61/000/009/022/052
E194/E155

9.6000

AUTHOR: Rozovskiy, Yu.A.

TITLE: Application of the qualitative theory of differential equations to analysis of the stability of electrical systems

PERIODICAL: Referativnyy zhurnal, Elektrotekhnika i energetika, no.9, 1961, 22, abstract 9E 116. (Izv. N-i. in-ta postoyan. toka, Sb. 6, 1960, 238-257)

TEXT: An attempt is made to obtain the necessary and sufficient conditions of stability in the form of explicit functions of parameters of the system 'station-infinite busbars' in the presence of strong generator field control. Fundamental concepts of the qualitative theory of differential equations are used. This procedure permits the use of analytical methods to determine optimum values of individual parameters that govern the system conditions, which is particularly important in analysing systems with strong control. The following assumptions were made in the investigations. (1) The receiving power-system is represented by busbars of constant voltage and frequency.

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(2) No allowance is made for transient processes in the machine stator circuits. (3) No allowance is made for field delay. (4) No allowance is made for the ohmic resistance of the stator circuits.

Differential equations are formulated that describe the electro-mechanical transient processes of the system under consideration and these are used to construct regions of stability, using the small-parameter method developed by Poincaré. Integral curves were constructed to separate the stability region. Any motion with initial conditions that lie within the region is characterised by a closed integral curve and is stable. Motion commencing outside this region is characterised by an open integral curve and is unstable. The procedure is applicable to all design circuits which differ little in parameters and structure from the circuit of 'generator on infinite busbars'.

7 literature references.

Application of the qualitative ... S/196/61/000/009/022/052
E194/E155

Editor's note: The application of the qualitative theory of differential equations to problems of power system stability was commenced by the fundamental works of the school of A.A. Andronov (N.P. Vlasov, 'Auto-oscillations of synchronous machines', Uch. zap. Gor'kovsk. Gos. in-ta, no.13, 1939; and L.N. Belyustina, 'An equation of the theory of electrical machines', Symp. "Pamyati A.A. Andronova", AS USSR, 1955).

[Abstractor's note: Complete translation.]

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ROZOVSKIY, Yu.A., kand.tekhn.nauk

Problems concerning the quality criteria of electric power and the quality of automatic control in electric power systems. Elektrichestvo no.10:69-70 O '60. (MIRA 14:9)
(Electric power distribution)
(Automatic control)

VAZHNOV, Aleksandr Ivanovich; ROZOVSKIY, Yuriy Aleksandrovich; SALITA, Pavel Zinov'yevich; KRAYCHIK, Yu.S., red.; ZHITNIKOVA, O.S., tekhn. red.

[Electrodynamic model of power systems] Elektrodinamicheskaia model' energosistem. Moskva, Gos. energ. izd-vo, 1961. 112 p. (MIRA 14:8)

1. Leningradskiy politekhnicheskiy institut (for Vazhnov)
(Electric power distribution--Models) (Electric machinery)

9.3220 (1013)

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S/044/61/000/007/027/055
C111/C222

AUTHOR: Rozovskiy, Yu.A.

TITLE: The application of the method of the small parameter for the investigation of stability of electric systems

PERIODICAL: Referativnyy zhurnal. Matematika, no. 7, 1961, 56, abstract 7 B 241. ("Vses. Mezhvuz. konferentsiya po teorii i metodam rascheta nelineyn. elektr. tsepey. no. 5 - 11". Tashkent, 1960, 198-231)

TEXT: The problem considered by the author is reduced to the investigation of the solutions of the system

$$\frac{ds}{dv} = -\delta - \frac{a_d y_d E_{d_0} \sin(\theta_0 + v) + a_d y_d l_d \sin(\theta_0 + v)}{s} + \frac{\frac{1}{2} a_d a_2 y_{g_d} \sin 2(\theta_0 + v) - p_0}{s},$$

$$\frac{dl_d}{dv} = \beta \sin(\theta_0 - v) - g_d \frac{l_d - l_b}{s},$$

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